AMENDMENTS TO THE CLAIMS:

Claim 1 (currently amended): A method of judging communication stability of a network system including a master unit forming a programmable controller and a slave connected to a network, said method comprising the steps of:

transmitting from said master unit to said slave a distorted test pattern formed by ~~distorting~~ changing width of each pulse of a standard test pattern to a specified distortion level;

returning a response from said slave to said master unit if said slave receives said distorted test pattern normally; and

judging that said network system has communication stability corresponding to said specified distortion level if said master unit receives said response normally.

Claim 2 (currently amended): The method of claim 1 wherein a plurality of distorted test patterns are sequentially transmitted from said master to said slave, each of said distorted test patterns being formed by ~~distorting~~ changing width of each pulse of said standard test pattern to a different one of a plurality of specified distortion levels, said method further comprising the steps of:

determining a boundary, beyond which communication from said master unit to said slave becomes impossible, based on whether or not there is a response from said slave to the distorted test pattern distorted to each of said specified distortion levels; and

determining said communication stability based on said boundary.

Claim 3 (currently amended): The method of claim 1 wherein said slave returns said response by ~~distorting~~ changing width of each pulse of said response according to said specified distortion level of the distorted test pattern received from said master unit.

Claim 4 (currently amended): The method of claim 2 wherein said slave returns said response by ~~distorting~~ changing width of each pulse of said response according to the one different specified distortion level.

Claim 5 (currently amended): The method of claim 1 wherein said network system

further includes a repeater connected between said master unit and said slave, said repeater being adapted to carry out waveform shaping on said distorted test pattern to form a corrected signal and to output said corrected signal after ~~distorting~~ changing width of each pulse of said corrected signal according to said specified distortion level.

Claim 6 (currently amended): The method of claim 2 wherein said network system further includes a repeater connected between said master unit and said slave, said repeater being adapted to carry out waveform shaping on said distorted test pattern to output a corrected signal and to output said corrected signal after ~~distorting~~ changing width of each pulse of said corrected signal according to the one different specified distortion level.

Claim 7 (currently amended): The method of claim 3 wherein said network system further includes a repeater connected between said master unit and said slave, said repeater being adapted to carry out waveform shaping on said distorted test pattern to output a corrected signal and to output said corrected signal after ~~distorting~~ changing width of each pulse of said corrected signal according to said specified distortion level.

Claim 8 (currently amended): The method of claim 4 wherein said network system further includes a repeater connected between said master unit and said slave, said repeater being adapted to carry out waveform shaping on said distorted test pattern to output a corrected signal and to output said corrected signal after ~~distorting~~ changing width of each pulse of said corrected signal according to the one different specified distortion level.

Claims 9-19 (canceled).

Claim 20 (new): A network system comprising a master unit forming a programmable controller and a slave, said master unit and said slave being connected to a network,

wherein said master unit includes:

transmitting means for transmitting a distorted test pattern, said distorted test pattern being formed by changing width of each pulse of a standard test pattern to a specified distortion level; and

judging means for judging that said network has communication stability corresponding to said specified distortion level if said master unit receives a response normally from said slave, said slave being adapted to return said response when said distorted test pattern is received normally.

Claim 21 (new): The network system of claim 20 further comprising a repeater between said master unit and a slave, said repeater comprising:

waveform shaping means for carrying out waveform shaping on a distorted test pattern changed to a specified distortion level and sent from said master unit; and

outputting means for changing width of each pulse of the waveform-shaped test pattern according to said specified distortion level and outputting the distorted waveform-shaped test pattern.